

A GRADUATE SCHOOL FOR BANGKOK, THAILAND

**Submitted in partial fulfillment
of the requirements for the degree of
Master of Architecture at the
Massachusetts Institute of Technology.**

May 21st 1956.

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Dean Pietro Belluschi

324 Harvard Street
Cambridge, Mass.
May 21, 1956

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Dear Dean Belluschi:

In partial fulfillment of the requirements
for the degree of Master in Architecture, I should
like to submit my thesis entitled, "A Graduate
School for Bangkok, Thailand."

Respectfully yours,

Krisda Arunvongse

"The deeper values of life are being impaired today by putting the emphasis of our existence on secondary considerations: business as an end in itself and this or that practical occupation. The 'trade-mentality,' so to speak, has superseded the desire for a balanced life as it informed former periods. Our whole system of education is directed to fit the man as soon as possible for specialized work. As soon as the happy playtime of the child is over he becomes confined to only one sector of life, losing more and more his innate connection with the totality of life. Discrepancy between occupation and vocation is seriously increasing. The courage to venture into other fields of human experience has vanished in our specialized system of production with its almost exclusively material aims. No doubt education has suffered considerably from our overestimation of material aspects and of a one-sided intellectual approach."

--Walter Gropius, "Scope of Total Architecture"

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A B S T R A C T

Once again, as I did for my undergraduate thesis, I selected to work on a problem concerning Thailand. The country can use so many things that every plausible project has a chance of being some day transformed into reality. This factor serves as a great inspiration for my work and makes me see Thailand as a country of great architectural opportunity, especially for those who know the land and love the people.

First of all, the climate is far from severe and imposes very few rules on architecture. We have many native materials that can be utilized and enough craftsmen remain to make fine detail work possible. Until very recently, our architecture has shown a love for decorative patterns that can still be employed, though in a lesser degree, in contemporary structure. The plants available are both colorful and of great variety.

In spite of all these potentialities, most of the buildings recently completed in Bangkok are far

from being contributions to architecture. They show neither contemporary architectural discipline nor traditional feeling for form and detail. Some traditional motifs have been employed in newer structures, but they were done without much patience or subtlety.

A new answer will have to be found. It is futile to imitate the past and it is also inappropriate to borrow an architectural expression that is foreign to the country.

We must make use of our workmen's capacity for fine detailing and careful workmanship. We must find new uses for those brilliant colors that make traditional architecture so striking. We must take advantage of our tropical climate in our designs and also use the numerous species of plant available to enhance the area around the buildings so that there will be a nice relationship between nature and architecture.

Moreso in the tropical region than anywhere else, architects should be concerned with the relationship between the building and the landscape treatment of the surrounding area. Life in that

region is not contained indoors as much as in the more severe climates. One spends a great deal of time in the open air. Landscaping, garden development, courtyards, parks and walkways become important factors that demand a great deal of attention in architectural design.

I feel that by working on problems concerning Thailand, while I am still in another country, I can formulate in my mind the right balance between the assimilation of the past traditional architecture and the adoption of the contemporary architectural expressions. Once the basic decision of what is the right balance has been made, then the carrying out into physical reality of such conviction would not be too difficult.

I N T R O D U C T I O N

UNDERGRADUATE EDUCATION IN THAILAND

There are a few universities in Bangkok. The largest and best equipped among these is the Chulalongkorn University. The courses offered are in engineering, sciences, pre-medical training, political sciences, architecture, literature, accounting and business administration.

University education in Thailand is not as complete as one might wish, and I am not talking about the intensity of students' knowledge concerning a particular field but rather about the students' understanding of the general purpose of education. With our present educational facilities, we cannot hope to produce specialists of the kind that other advanced countries are producing. However, Thailand is an agricultural rather than an industrial country; therefore the specific knowledge that students obtain from their universities proves entirely adequate.

Something that seems lacking, and this is an

opinion shared by other Thai students here, including those who went through the universities themselves, is the students' understanding of the aim of education. Only a few appreciate the fact that practical knowledge is but a part of total education. No consistent attempts have been made to show them that the aim of education is to produce graduates who will have the ability to do work as well as the integrity to do it according to their standards.

The students should be made to realize that general knowledge is as important as specific knowledge. The time available for a college education is limited, and the best thing a school can impart to students is to arouse in them the desire to learn more and also the system with which they may pursue their self-education; a lifelong, endless task. What a school could give for a well-rounded education is not specific knowledge in many fields other than the student's own specialized field, but rather a general awareness of the importance and the contributions of other professions. Thus, when students' works come into conflict with the aims of people in other professions, they will know

where to compromise and at what point they should take their final stand.

The students need not so much a knowledge of other fields as a feeling for them, a consciousness of their existence and an insight into their relation to the student's particular profession.

George Howe, chairman of the Department of Architecture at Yale once said, "A specialized course of training may be compared to a tree. Specialized knowledge is the root and trunk which support the whole structure and draw nourishment from the earth. Related knowledge in many fields is the system of branches which extends its leaves to receive the light, the air, the rain, from the surrounding atmosphere. So, even if time were no object, a hundred specialized courses might in the end produce only a forest of dry poles." This observation can be applied to many fields besides architecture.

THE NEED FOR A NEW GRADUATE SCHOOL

The purpose of this thesis is to design a graduate school whose curriculum and physical layout will give the students a new orientation to life and

a different kind of education from what they have received during their undergraduate years.

The aim is to produce students who will have a right balance between specific and general knowledge so that they will have broad enough a perspective not to take any short cuts that further their own interests at the expense of disproportionate sacrifices of others. They will develop their character and common sense so that they will be able to adapt themselves when faced with difficult situations. The ideal students are those who have the intelligence of a scholar, the sense of values of a priest and the courage of an honest man.

The architectural problem is to produce structures and ground developments that will make easier the task of carrying out such a program of education. The architectural aim is to produce in certain parts of the complex an atmosphere conducive to reflections and self-discovery while in other parts the main idea will be to produce a sense of social responsibility and to facilitate social contacts among the students.

T O W A R D A T R U E U N D E R S T A N D I N G O F D E M O C R A C Y

In a young democratic country like Thailand, where a regime of absolute monarchy has been abolished less than twenty-five years ago, it is all too easy for the unscrupulous politicians to take command of governmental seats. Power politics becomes common practice and crime and corruption become the privilege of the powerful. There are many in politics who are basically honest and able, but due to their lack of support and their instinctive sense of survival, they do not feel that it is a wise practice to intervene in the actions of those who hold the guns. Law and its enforcement, freedom of speech and of the press, the people's right to vote, these cornerstones of democracy become so many hollow shells that the self-elected greats may choose to disregard whenever it is convenient for them to do so.

Our young men and women, even the majority of our college graduates, are unconcerned and careless

about politics. They know very well that there have been many victims of outrageous injustice, but they still entertain the thought that such misfortunes could not possibly fall upon themselves.

There is an explanation for this general unconcern about politics: the fault lies in our educational system. Political discussion is forbidden as something inappropriate for high school students. Even among college students such talk is not encouraged.

How then can one expect these young men and women to develop into conscientious members of their community, knowing their obligations toward their society as well as their individual rights which the society must respect? People still have the same idea about the government as they did under the absolute regime. They are fearful, submissive and unwilling to exert their own rights. Many do not even realize that they have any such thing as individual rights. How then can one ask them to demand a truly democratic government, the one that is elected by the people for the sole purpose of carrying out the will of the people?

The disregard of the powerful for the law of the land and the rights of the people causes more moral than physical damage. Corruption becomes common practice and those who refuse to be corrupted are no longer admired but simply laughed at as being prudishly moralistic. Many honest men who have the right sense of values begin to despair.

Now, how can we go about getting rid of this unwholesome state of affairs? A new set of unscrupulous politicians will only make things worse. The solution is to have a responsible government. However, we can only have that after we develop among the people a sense of responsibility concerning politics, a courage to stand up for their own rights and a sense of values that will serve as a guiding rule for their conduct. When we have enough of this type of people it is inevitable that we will then have a responsible government. They will not rest content with anything less.

The graduate school as proposed in this thesis aims to produce such people. The number of students has been kept very limited because to produce such qualities among the students is a very difficult

task. Thousands of people of this type will be needed before a good governmental system can evolve. It will take decades before this school will produce that many graduates. Nevertheless, the school will serve as a new idea, a new moral force that will have effects above and beyond its physical production of sixty graduates a year.

THE TEACHING AT THE GRADUATE SCHOOL

In the pursuit of specialized knowledge, one often loses sight of the aims and the contributions of those in other professions. Such a narrow outlook inevitably leads to conflicting actions among people of different fields, even though all of them may be working toward the same goal of making living physically more convenient and spiritually more rewarding.

It is the purpose of this thesis to propose a graduate school whose graduates will be dexterous in their own field of specialization and at the same time will be sympathetic to the aspiration of others who may be working in many other different fields so that all of them may pursue their works harmoniously for the benefit of the whole.

While developing their field of specialization and broadening their scope of interest, the students should also be encouraged to develop the inner forum of honesty, courage, responsibility and sense

of value. A student who has a great deal of factual information may not necessarily be a useful man. Without the right kind of inner convictions, he may use or misuse his knowledge according to chance and circumstances. However, with a fine sense of value, a well-informed man will be a reliable asset to his community. The realization of his obligations toward his society and his high ideals will give a direction to his work and a meaning to his life.

GENERAL KNOWLEDGE AS A MEANS TOWARD TOTAL PERSPECTIVE

The courses of study offered at this graduate school will range from sciences to theology, with

- | | |
|---|-----------------|
| • | Sciences |
| • | Technology |
| • | Social Sciences |
| • | Art and Design |
| • | Philosophy |
| • | Theology |

art and design serving as a creative force that ties the analytical with the spiritual extremes. From technological studies, one learns to be exacting and methodical and from sciences and mathematics, logic and

its applications. From humanistic studies, one learns to develop a right sense of values as well as

an appreciation for ideals. From art, one learns to increase one's sensitivity of perception, which in turn will increase one's creative power. From religion one develops an inner strength that will give one a sense of direction and a courage to stand up for right.

It is not humanly possible to know all of these different aspects of education to any great extent. The rewards for such a gigantic attempt would hardly be worth the effort. However, to broaden one's perspective, one needs some basic understanding of each of these different branches of knowledge so that one can learn to appreciate their unique values.

THE SCHOOL

The school is designed to accommodate about 120 students, close to 10% of the graduates turned out each year by the undergraduate universities in Thailand. For these students, the teaching at this graduate school will be different both in method and content from the kind of teaching they have received during their undergraduate years.

They will be encouraged to think independently

and to develop a system for their own self-education. It is no longer appropriate, at this stage of education, to give the students simply more facts and data. No amount of factual information can cover all the possible problems that the students may have to face later on in life. What they need is not more facts but rather a system of approaches, with which they may solve their own problems. Therefore, in this graduate school classrooms will not be necessary, but instead, we will need many seminar rooms and a very large library.

The students of sciences and technology, however, will need a great deal more factual information than the students in other fields. Nevertheless, they will benefit greatly from pursuing their education in this type of school. They will have a chance to associate with the students of less theoretical fields, and such contacts will generate in them a sense of human value so necessary among scientists and engineers. Such human understanding will give meaning and direction to the applications of their theoretical knowledge.

For the students in the field of humanities, art and religion, the value of this Renaissance-like system of education is even more obvious.

THE FACULTY

There will be five permanent professors at this graduate school, each taking charge of his department. The five fields are science and technology, social sciences, art and design, humanities, and theology. There will be many courses under these main departments, each supervised by a visiting professor, critic, or expert.

The five permanent professors will share the responsibility of maintaining the school's policy. They will also act as a board of admission. The office of president, vice-president, dean of students, bursar and registrar will be assigned to each of these five professors. They will need assistants and secretaries to help them with their work.

Another important task that these professors will have to accomplish is the maintenance of close contact with the top men in various fields, experts in industry and professors from various undergraduate

universities. These men will be asked to serve as visiting professors at the graduate school. Since only thirty or so of these visiting professors will be needed, it should not be too hard to approach only those who are sympathetic to this kind of education.

These visiting professors will act as thesis advisors. They will have a few students who are interested in their particular fields working under their direct supervision. These professors will come to the graduate school and spend a few hours each week, scheduled according to their convenience, to be in consultation with their students. The meetings will be held in the seminar rooms provided at the department headquarters. Such informal and close relationships between teachers and students should inspire the students to do quality work.

Those visiting professors who are good lecturers will be asked to give a series of lectures at the school auditorium for the benefit of the whole student body. Interested outsiders may attend these lectures since adequate room will be provided in

the auditorium to accommodate other outside scholars. The lecturers can choose any topic, general or specific, concerning their particular fields of specialization. They should say a few words, however, about the aims and the accomplishments of their particular profession. The purpose of these lectures is to make the students appreciate the unique value of other professions and understand the aspiration of the people who work along other lines.

Each lecture series may extend from one to two weeks and twenty to thirty of these series may be presented during each academic year. Before his series a lecturer may post on the bulletin board a list of basic readings that will help the students comprehend more readily the content of his lectures.

THE STUDENT

The students will be encouraged to attend as many of these lecture series as possible, and they will be asked to submit reports on about half of the series presented, choosing any of those they prefer. They will be in the graduate school for two years and will qualify for their degrees on the com-

bined merits of their specialized studies and their basic understanding of other fields of specialization. No hard and fast rule should be made about the proportion of time and interest a student should devote to specialized versus general studies, but that proportion should be kept flexible to allow for individual temperament and ability. However, the aim should always be the maintenance of reasonable balance of these two aspects of education.

Personal relationships among the people of different fields will help broaden the students' view. Intense specialized studies will make them competent members of their professions. The graduates turned out by this school should be, then, capable men who are conscious of the desirability of harmonious development among all fields of work and the danger of conflicting individual developments.

THE MAJOR FIELDS AND
BRANCHES

- Sciences & Engineering
 - Physics
 - Chemistry
 - Mathematics
 - Biology
- Professor: A Scientist
 - Mechanical Engineering
 - Civil Engineering
 - Electrical Engineering
- Social Sciences
 - Economics
 - Industrial Management
 - Sociology
 - Psychology
 - Political Sciences
- Professor: A Sociologist
- Literature & Philosophy
 - Law
 - History
 - Literature
 - Philosophy
- Professor: A Historian
- Art & Design
 - History of Art
 - Architecture
 - Painting
 - Sculpture
 - Music
- Professor: An Architect
- Theology
 - World's Great Religions
 - Contemporary Thoughts
concerning Religions
 - Buddhism
- Professor: A Theologian

THE AREA REQUIREMENTS

AUDITORIUM SEATING 240

Lobby
Stage
Dressing Room
Storage Room
Projection Room
Rest Rooms 4,000 sq. ft.

LIBRARY FOR 60,000 VOLUMES

Stacks
Main Reading Area
Periodical Reading Room
Music Room
Lounge
Study Cubicles
Catalogue Area
Workshop
Rest Rooms 15,000 sq. ft.

5 DEPARTMENT HEADQUARTERS

Professor's Office
Assistant's Office
Secretaries' Office
Reception Room
Guest Room
Seminar Room
Rest Rooms and Storage @ 2,500 sq. ft.
each

EXHIBITION AREA

Information Booth
Sitting Area
Storage 4,200 sq. ft.

STUDENT UNION

Lounge
Book Store
Ping-Pong Room
Billiard Room
Offices
Rest Rooms and Storage 5,000 sq. ft.

KITCHEN AND DINING AREA

Dining Room
Snack Bar
Serving Room
Kitchen
Rest Rooms and Storage 3,600 sq. ft.

4 DORMITORIES, 3 FOR MEN AND 1 FOR WOMEN

Single Rooms
Lounge
Bath for every 4 Rooms
Storage Room @ 5,400 sq. ft.
each

GUARDS AND JANITORS' QUARTERS

BICYCLE SHEDS

TENNIS COURTS

BADMINTON COURTS

A PARK AND COURTS OF VARIOUS SIZES AND TREATMENTS

ACCESS ROAD AND PARKING AREA FOR CARS

THE DESIRED ARCHITECTURAL ATMOSPHERE

The architectural problem in this case is the arrangement of elements so that the desired atmosphere can be generated. To produce an honest, competent and understanding type of graduate, we will need an architectural environment that seems like home in certain parts of the complex, like a monastery in others.

The school's double aim of strengthening individual characters and fostering social contacts among the students of various professions will be reflected also in double expressions in the architectural design. The quiet, monastic atmosphere around the dormitories will contrast with the active atmosphere around the student union. The informal courts in front of the headquarters will be made more effective by the presence of the formal, paved area of the entrance court located nearby.

Similar materials, module and methods of construction will be used for all the buildings in this complex. The unity of architectural expression among the various structures will symbolize the school's belief in the unity of aim among the various specialized professions.

MAP OF BANGKOK SHOWING THE RELATIONSHIP
BETWEEN THE SITE AND THE TEMPLE AND
CHULALONGKORN UNIVERSITY.



THE BASIC DESIGN AND PLANNING

THE SELECTION OF THE SITE

The particular site chosen for the graduate school fulfills three basic requirements. It is located next to a Buddhist temple. It is within walking distance of Chulalongkorn University, and it is not far removed from the center of the city.

By locating the school next to a temple, the students will be constantly exposed to the priestly way of life which shows how man can be satisfied with the barest minimum of material possessions if he has the right kind of inner strength.

The chanting of the priests during their evening rituals, the colorful roof of the temple and the silhouette of the tall pagodas will serve to remind the students of the way of life and tradition which still has something to offer to the materialistic world but which is now being generally ignored.

The graduate school need not be physically connected to the temple grounds. Each should be

a separate entity because the function of the school is not the same as that of the temple. What the school wants to produce is not more priests but more competent, well-rounded graduates who will appreciate the value of the priestly outlook toward life.

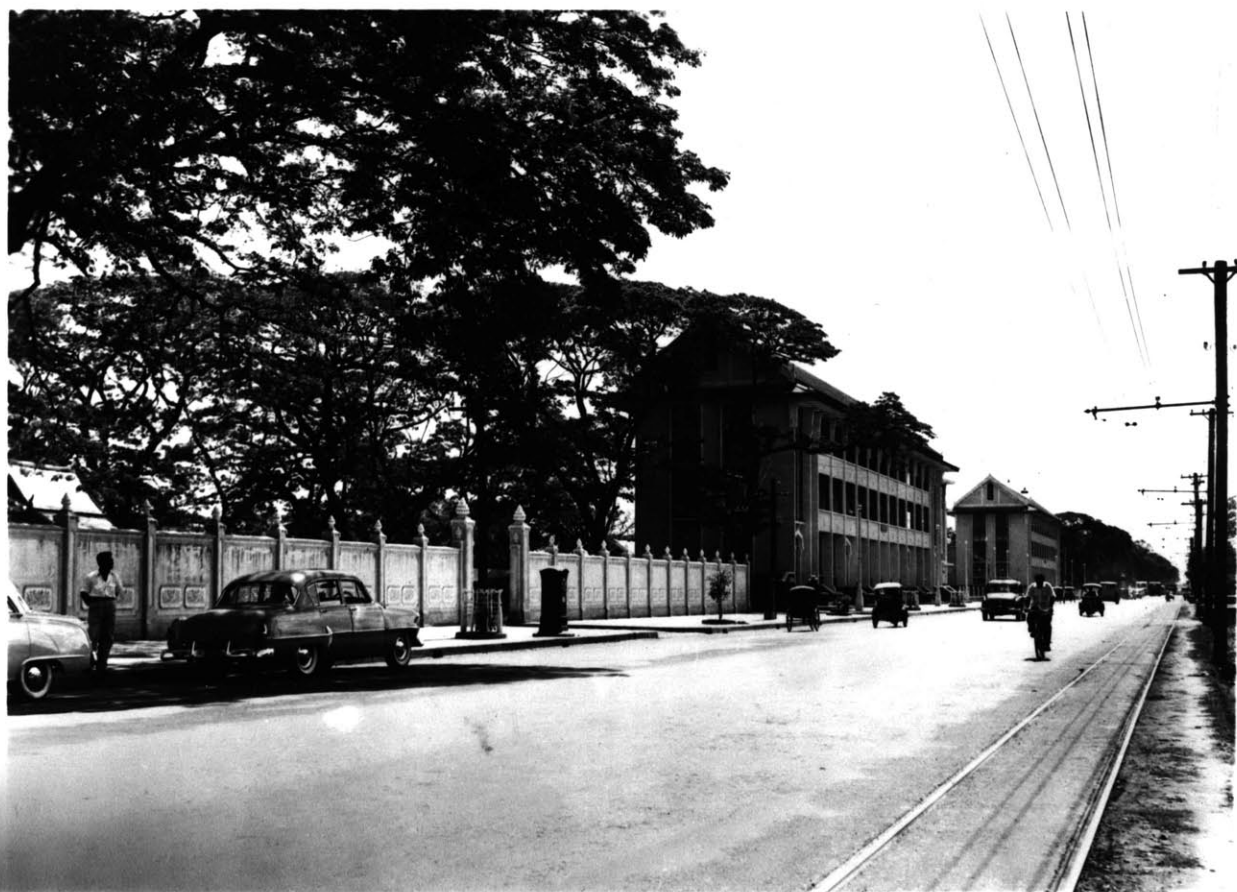
By locating the graduate school near Chulalongkorn University, we will make it convenient for those students who will need laboratory facilities and mechanical equipment for their work. They will be able to utilize the facilities available at Chulalongkorn University without wasting too much time traveling.

By locating the school near the center of the city we will help the students to realize the existence of a variety of problems that they will have to face later in their careers. At this stage of education the students no longer need to be protected from reality. On the contrary, they will benefit from being exposed. The problems will serve as a challenge for them to find ways and means of arriving at solutions.



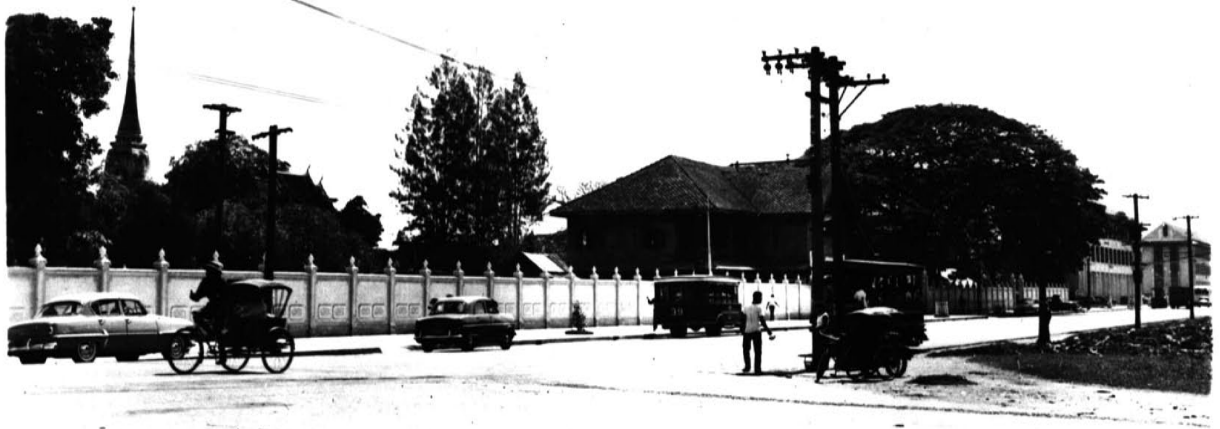
MAIN STREET IN FRONT OF THE SITE.

MAIN STREET LOOKING EAST SHOWING THE WALL
OF THE TEMPLE GROUND NEAR THE SITE.



THE INTERSECTION BETWEEN THE MAIN STREET
AND THE STREET LEADING TO CHULALONGKORN
UNIVERSITY.

THE STRUCTURES ALONG THE MAIN STREET.



THE GROUND OF THE NEARBY SPORTS CLUB
SHOWING SIMILAR TOPOGRAPHY TO THE SITE
OF THE GRADUATE SCHOOL.

ONE OF THE SIDE STREETS NEAR THE SITE
SHOWING THE CHARACTER OF THE EXISTING
STRUCTURES.



THE TOPOGRAPHY OF THE SITE

The site is an undeveloped piece of land, a part of a very large property owned by an elderly princess. The ground is flat and the water level is approximately 3 feet below the ground surface. The lot is almost rectangular, measuring 550 feet by 1200 feet, elongated in the north-south direction. The south side of the lot faces one of the major streets in Bangkok. To the east is the ground of the Pratumvararam temple. To the west is more vacant land and some developed ground that used to be the residence of the elderly princess. A row of wooden structures occupied by the poorer people limits the north side of the lot. Beyond these wooden houses there is a 30- to 40-foot wide canal that doesn't seem important enough to make it worth the trouble of extending the lot to face it.

There will be a fence of bamboo panels all around the perimeter of the school's property. Openings onto the temple ground and the garden of the princess' residence can be achieved by making panels along these sections rotating. The idea is

to make the school area a complete unit but to retain at the same time some visual ties with the important elements around the site.

WEATHER CONDITIONS

There are three seasons in Thailand. The hot season runs from March to June, the rainy season from July to October, and the cold season from November to February. The academic year begins late in May and ends in March, avoiding the peak of the hot season. The temperature in Bangkok varies from 60° F. in December to around 95° in April. The average yearly rainfall is around 54 inches.

To keep the heat away from the interior spaces, the double roof system will be used. The area between the two layers of roof will be kept open and simply screened so that the prevailing wind can carry away any hot air that might accumulate between the upper and the lower roofs. White roofing material will be used on top of insulating boards which may be made of compressed straw slabs or jute fibers which can be treated against fungal attacks even under damp conditions.

Wide overhangs around the buildings will shield the facades from direct sunlight and will allow windows to be open for ventilation during rainfalls. In some cases the wide overhangs will also serve as protection for exterior corridors. Most of the structures will be lifted about $1\frac{1}{2}$ feet off the ground to prevent dampness in interior spaces, and those that are not lifted will have deep fills to insure similar protection.

ARRANGEMENT OF ELEMENTS

The buildings are grouped into four categories, the semi-public, the academic, the social and the private--according to their functions. The auditorium, the library and the exhibition area are called the semi-public buildings because outsiders will occasionally come and enjoy the facilities of these buildings. The five department headquarters belong to the academic group, the student union and the dining hall belong to the social group and finally the four dormitories will be placed in the category of private buildings.

The building groups are located relative to the

street and the entrance. Nearest to the street are the semi-public buildings and farthest from it are the private buildings with the social and academic buildings located somewhere in between.

All the structures have been oriented so that their main facades will face north and south. East and west exposures have been avoided as much as possible due to the problem of intense heat-gain from direct sunlight.

THE VARIOUS COURTS

There will be many courts in this graduate school. There will be a public court that will be paved and enriched with a mural and a sculptured wall, a main court and a few highly developed courts among the dormitories. Next to each department headquarters there will be a small informal court. Back of the dormitories there will be a large park area.

The main idea in designing the courts for this project is to provide a great deal of variety among them. They should vary in size, shape, texture and landscaping so that there will be a constant change of atmosphere as one walks from one part of the

school to another.

In that region of the world, the treatment of outdoor spaces becomes an important design consideration since people spend a lot of time outdoors, especially late in the afternoon and early in the evening. Since the courts will be well developed, they will be used a great deal by the students. Such close association with nature and the natural forms will help the students to develop their sensitivity. The Zen followers are right in believing that good landscaping can be an effective means of inspiring one's thoughts and reflections.

PARKING PROVISIONS

There will be parking spaces for 40 cars near the auditorium and the library, for 10 cars near the department headquarters and for 20 cars near the dorms. Bicycle storage sheds will also be provided. The road that encircles the complex is 16 feet wide and gives access to all of the structures.

THE AIM

Next to the school is the quiet temple ground and not too far away is the chaotic area of the

city's center. The location of the school near a few contrasting forces will help the maturing students to realize the existence of a few problems in Thailand. After a while, they will also realize that the type of man who will be equal to the task of solving those problems will have to have the discipline of a priest, the courage of an honest man and the intelligence and capability of a scholar. Once the school can make the students want to become men of this type, half of the battle will be won.

Later on, after attending the series of lectures given by the people of different professions and at the same time continuing their own specialized studies, the students will see the value of both specialized and general education. They will also realize the importance of keeping in balance the intricate relationships among the different specialized professions.

THE DESIGN OF INDIVIDUAL STRUCTURES

The buildings in this graduate school have been designed with the following aims in mind.

Firstly, the complex must read as a related whole in spite of the structures' various shapes and sizes. There should be a unity of architectural expression among the buildings. This aim can be achieved by using similar module, materials and system of construction throughout the majority of the structure.

Secondly, the buildings should be substantial, both in their designs and in details, so that the students can be proud of the school's architecture. This can be done by allowing for more than minimum areas and by demanding more than passable workmanship.

Thirdly, the structures should have contemporary architectural expressions yet retain some traditional forms that symbolize the culture of the land and the beliefs of the people. This aim can be achieved by using contemporary methods of design and construc-

tion and then employing some of the traditional motifs among the structures in the form of decorative patterns.

In the design of this graduate school, the main idea is to create spaces that will be compatible in quality with the kind of knowledge that the school aims to impart to the students.

THE AUDITORIUM

A lecture hall should be as important to students as a temple is to priests. This structure will assimilate somewhat the form of a temple. Brilliant roof tiles and decorative patterns will be used in this building to give it some sense of visual tie with the traditional architecture of the nearby temple.

The students will come to the auditorium to attend the lecture series which will be given a few evenings a week throughout the academic year. Because interested outsiders will be welcome to attend these lectures, the building has been designed to accommodate a lot more than the number of students in the graduate school.

The seats will be generous and the distance from back to back of the seats will be about 3 feet so that there will be enough room to include a small writing surface for each seat. The form of the building will be triangular with the main facades facing north and south. These facades will have decorative patterns that will be perforated around the section near the ridge for the purpose of ventilation.

The height and the color of the building will make it readily visible from the street.

THE LIBRARY

The library is designed to contain 60,000 volumes. This number of books should be adequate in this case since they will all be only the most current books of each field. The less current ones will be distributed to the libraries of other undergraduate universities.

The building is a rectangular, two-story, hip roofed structure. The main entrance is from the front court, opposite the entrance to the auditorium. The librarian's office is located next to

the entrance for good control. There will be a library lounge for relaxation and for group discussion. There will also be a music room and two listening cubicles.

The main reading area will face the great court and will be separated from the periodical reading area only by a low partition. There will be many study cubicles provided for the students' individual work. To facilitate group study, the stacks will be arranged to form small alcoves, each containing only the current volumes on one particular field.

On the lower floor, there will be a workshop for repairing and cataloguing books. The rest of the space will be devoted to more stacks and study cubicles.

THE EXHIBITION AREA

The walls of this exhibition area will simply be a set of screens and louvers. The structure will be used for all kinds of exhibitions, preferably those corresponding in content to the lecture series given at the auditorium. In front of the building there will be a reflecting pool and in the back

there will be a court where outdoor exhibitions can be held.

At one end there will be an information booth that can be readily seen both from the pedestrian entrance and from the automobile entrance. At the other end, there will be a large storage area.

THE DEPARTMENT HEADQUARTERS

There are five of these structures. The department headquarters have been designed so that they will help the development of informal and personal relationships between the students and the teachers. Each building will have a private garden that can be used by visiting professors for informal group discussions with their students. Each garden will be landscaped according to the preference of the permanent professor of that department. The different treatments of the gardens will give each department headquarters a special character of its own.

In his department headquarters, a permanent professor will have a large office which he could easily turn into a bedroom and office combination,

should he so desire. He will also have a private bath. His assistant will have a small office next to his, and beyond that will be the front office for the secretaries. The bathrooms, the storage spaces and a kitchenette form an elongated central core. On the other side of the core are the reception room, a guest room where a visiting professor may spend the night and a large seminar room opening onto a garden. A kitchenette has been provided in the seminar room so that the permanent professor can entertain the students once in a while.

THE STUDENT UNION

This building is the social center of the school. There will be a ping-pong room and a billiard room. A few badminton courts will also be located next to this building. There will be a small room for first aid facilities and another for student publication office. There will also be a big lounge, separated from the dining room only by a small, paved court. This lounge will be used for many functions, for waiting before dinner, for talking after dinner, for games, for relaxation and for

dances. A lecturer, after giving his series of lectures at the auditorium, may be invited for dinner and afterward may use the lounge to give an informal talk to the students.

THE DINING ROOM, SNACK BAR AND KITCHEN

The kitchen will serve both the snack bar and the dining room. The snack bar will be used for breakfast and snacks and the dining room will be used for lunch and dinner. The dining room will be sub-divided into small dining alcoves by some light elements that can be easily removed should the occasion call for one large dining area.

At lunch time, the caterers who go from house to house selling different sorts of food will be allowed to set their stands on the paved area near the dining room and sell their foods to the students. They will provide a lot of color and noise that will make this social corner of the school more lively and interesting.

THE DORMITORIES

The dormitories are long, one-story structures that allow all the rooms to have direct access to

the private gardens in front of the rooms as well as to the large, well-developed courts among the dormitories. The rooms are all single rooms, and each four rooms form a unit with one toilet facility. The bathrooms are compartmentalized so that all the facilities can be used simultaneously. The rooms are designed to have an atmosphere of peace and quiet. A moment of solitude and reflection can help the students to see things in the right perspective. For conversations and games, a small lounge will be provided in each dormitory.

The bamboo panels that define the private gardens will also provide a visual barrier that will give some privacy to the people in the rooms. The development of these small gardens next to the rooms will be the responsibility of the students. The courts among the dormitories will be thickly planted so that the students may sit and do their work out there if they wish. Stone, water and gravel paths will also be used in the landscaping of these courts.

C O N C L U S I O N

Ours seems to be the age of specialization, the age of dexterous means without any specific aims. Everyone seems to be intent upon pursuing one narrow, specialized channel of knowledge or another without any serious attempt to understand the intricate relationships among the different fields of specialization. The inaccuracy of specialization lies in the lack of over-all perspective. It should be obvious that we need both specialized and general knowledge. The right balance between these two aspects of education should lead one to a richer, more unifying and more comprehensible life. One will then know when and how one should compromise one's personal interests for the sake of common gains. Over and above the acquisition of specialized and general knowledge, one will also need an inner forum, a sense of values, a discipline that will serve as a guiding rule according to which one may use one's knowledge.

The graduate school that I am proposing in this thesis is an attempt to develop students who will have specialized and general knowledge as well as the inner strength. Many spatial and academic requirements that seem relevant to the development of those qualities have been incorporated into the design of this graduate center. However, in order to produce students who will have a great amount of knowledge as well as great strength of character, we will need something more besides sensible curricula and reasonable architectural provisions. That something must be found in the students themselves. Sensitivity, sympathetic attitude, love for humanity and selfless devotion to duty are among the qualities that no one can presume to be able to foster in others simply by setting up good curricula and providing proper atmosphere. However, a good student will find it easier to discover his inner strength in such a place as this graduate school where the curricula and the spaces have been designed to inspire just such discovery.

Those students with whom the school has been successful will have a very good chance of becoming

important and useful members of their professions later on in their careers. After two years of intense professional studies, the students will have better technical or specialized knowledge concerning their particular fields than most other members of their professions.

Specialized knowledge will be the means that will carry these graduates up the professional ladders toward responsible positions. Their basic understanding of the aims and the workings of the people in other fields will keep them out of wasteful conflicts. Their sense of values will guide their decisions. Their work and their way of life will set a standard for others to follow. When we have enough of this type of man in the various responsible positions in the country, we will no longer have to face many of the problems that exist in Thailand today.

B I B L I O G R A P H Y

- The Aims of Education
By Alfred North Whitehead
- Scope of Total Architecture
By Walter Gropius
- Training for the Practice of Architecture
By George Howe
- Bhagavad-Gita
Translated by Christopher Isherwood
- The Teachings of Buddha
Translated by Edwin A. Burt